

No.

9400168



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

AgriPro Biosciences Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HERETO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF Viable BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT.

UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS OWNED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

DURUM WHEAT

'Voss'

In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington, D.C.
this 30th day of June in
the year of our Lord one thousand nine
hundred and ninety-four.

Attest:

Kenneth H. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Mike Eason
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPROVAL EXPIRES 4-30-85

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions on reverse)

1. NAME OF APPLICANT(S) <u>AgriPro Biosciences Inc.</u> <u>HybridTech US, a Monsanto Company</u> Cgm ol Jun 1998		2. TEMPORARY DESIGNATION D87-1534 or ABI87-1534	3. VARIETY NAME VOSS
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) 6700 Antioch Shawnee Mission, Kansas 66204		5. PHONE (Include area code) 913-384-4940 (KS) 303-532-3721 (CO)	FOR OFFICIAL USE ONLY PVPO NUMBER 9400168
6. GENUS AND SPECIES NAME Triticum durum	7. FAMILY NAME (Botanical) Gramineae	FILING DATE May 12, 1994 TIME □ A.M. <input checked="" type="checkbox"/> P.M.	
8. KIND NAME Spring Durum Wheat	9. DATE OF DETERMINATION July 1991	FEES RECEIVED AMOUNT FOR FILING \$ 2,325.00 DATE May 5, 1994	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation		AMOUNT FOR CERTIFICATE \$ 275.00 DATE June 21, 1994	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		12. DATE OF INCORPORATION February 8, 1989	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Robert J. Bruns P.O. Box 30; 806 N. Second Street Berthoud, Colorado 80513 303-532-3721 C. Bruns or Joe Smith (303-532-3721) 806 N. Second St. Berthoud, CO 80525 PHONE (Include area code):			
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) b. <input type="checkbox"/> Exhibit B, Novelty Statement Cgm ol Jun 1998 E-mail: <u>Mark.J.Messmer@5912 North Meridian</u> c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of Variety (Request form from Plant Variety Protection Office.) d. <input type="checkbox"/> Exhibit D, Additional Description of Variety. e. <input type="checkbox"/> Exhibit E, Statement of the Basis of Applicant's Ownership. Exhibit F.; Quality and Agronomic Data Mark J. Messmer 5912 North Meridian Wichita KS 67204 ph: 316 755 7707 fax: 316 755 0072			
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(u) of the Plant Variety Protection Act.) <input checked="" type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input type="checkbox"/> No			
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> Foundation <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified	
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? <input type="checkbox"/> Yes (If "Yes," give date) <input type="checkbox"/> No			
19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No			
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF APPLICANT <u>Robert J. Bruns</u>		DATE 4-18-94	
SIGNATURE OF APPLICANT		DATE	

EXHIBIT A.**ORIGIN AND BREEDING HISTORY OF VOSS**

Voss originated from the cross 'Vic/Lloyd' which was made at Berthoud, Colorado in 1983. Selections were made from an F2 population of this cross at Berthoud in 1984. Selection criteria at this stage were leaf and stem rust resistance. Single seed descent was used to advance these selections through the F3 and F4 generations in the Berthoud greenhouse. An F5 headrow of one of these selections was bulked from the 1985 selection nursery at Climax, Minnesota. The selection criteria in this nursery were uniformity, foliar disease resistance and leaf rust resistance. This bulk was increased at Berthoud in 1986 and was entered into yield trials in 1987 under the experimental designation 'D87-1534'.

Voss has been yield tested in AgriPro nurseries in the Red River Valley from 1987 to 1992. It has also been tested in the Uniform Regional Durum Wheat Nursery in 1992.

In 1990, 84 head-rows were grown in Berthoud, Colorado and 82 of these head-rows were selected and bulk harvested. In 1991, 480 pounds of breeders seed was grown in Colorado. In 1992 an additional 15,065 pounds of breeders seed was produced in Berthoud, Colorado.

Voss has been uniform and stable since 1991 as observed in the breeder seed production. Approximately 90% of the rogued variant plants consisted of slightly taller durum wheat plants. Up to 1% variant plants may be encountered in subsequent generations.

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EXHIBIT B.**NOVELTY STATEMENT VOSS**

Voss is most similar to the durum spring wheat Stockholm. However, it can be easily distinguished by the following morphological characteristic:

- Voss has a green plant color at boot stage (R.H.S. Colour Chart #137B) as recorded at Berthoud, Colorado for the following years: 1990, 1991, 1992, 1993. Stockholm has a blue-green plant color at boot stage (R.H.S. Colour Chart #122B) as recorded in Berthoud, Colorado for the following years: 1983 thru 1993.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (TRITICUM spp.)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)

AgriPro Biosciences Inc.

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

6700 Antioch
Shawnee Mission, Kansas 66204

FOR OFFICIAL USE ONLY

PVPO NUMBER

9400168

VARIETY NAME OR TEMPORARY
DESIGNATIONPlace the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. 0 8 9) or (0 9) when number is either 99 or less or 9 or less.

1. KIND:

2 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:

1 1 = SPRING 2 = WINTER 3 = OTHER (Specify) 2 1 = SOFT 3 = OTHER (Specify)
2 = HARD

3 1 = WHITE 2 = RED 3 = OTHER (Specify) DURUM

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:

0 6 2 FIRST FLOWERING

0 6 7 LAST FLOWERING

4. MATURITY (50% Flowering):

0 1 NO. OF DAYS EARLIER THAN 7 1 = ARTHUR 2 = SCOUT 3 = CHRIS
---- NO. OF DAYS LATER THAN 4 = LEMMI 5 = NUGAINES 6 = LEEDS 7 = Lloyd

5. PLANT HEIGHT (From soil level to top of head):

0 8 0 CM. HIGH

---- CM. TALLER THAN

0 3 CM. SHORTER THAN 7 1 = ARTHUR 2 = SCOUT 3 = CHRIS
4 = LEMMI 5 = NUGAINES 6 = LEEDS 7 = Lloyd

6. PLANT COLOR AT BOOTING (See reverse):

2 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTER COLOR:

8. STEM:

2 Anthocyanin: 1 = ABSENT 2 = PRESENT

2 Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT

0 5 NO. OF NODES (Originating from node above ground)

9. AURICLES:

2 Anthocyanin: 1 = ABSENT 2 = PRESENT

10. LEAF:

1 Flag leaf at booting stage: 1 = ERECT to 90 degree angle from stem
2 = RECURVED
3 = OTHER (Specify):

1 Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT

1 5 MM. LEAF WIDTH (First leaf below flag leaf):

2 6 CM. LEAF LENGTH (First leaf below flag leaf):

FORM GR-470-6 (REVERSE)

11. HEAD:

3 Density: 1 = LAX 2 = DENSE 3 = MIDDENSE

1 Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE
4 = OTHER (Specify) _____

4 Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETTED 3 = AWNLETTED 4 = AWNED

1 Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED
5 = BROWN 6 = BLACK 7 = OTHER (Specify) _____

0 9 CM. LENGTH

1 1 MM. WIDTH

12. GLUMES AT MATURITY:

3 Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.)
3 = LONG (CA. 9 mm.)

2 Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.)
3 = WIDE (CA. 4 mm.)

6 Shoulder: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED
shape: 4 = SQUARE 5 = ELEVATED 6 = APICULATE

3 Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

1 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

1 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

3 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

3 Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

2 Check: 1 = ROUNDED 2 = ANGULAR

1 Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

1 Brush: 1 = NOT COLLARED 2 = COLLARED

Phenol-reaction 1 = IVORY 2 = FAWN 3 = LT. BROWN
(See instructions) 4 = BROWN 5 = BLACK

2 Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

7 8 MM. LENGTH

2 8 MM. WIDTH

3 6 GM. PER 1000 SEEDS

17. SEED CREESE:

1 Width: 1 = 60% OR LESS OF KERNEL 'WINOKA'

1 Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT'

2 = 80% OR LESS OF KERNEL 'CHRIS'

2 = 35% OR LESS OF KERNEL 'CHRIS'

3 = NEARLY AS WIDE AS KERNEL 'LEMHP'

3 = 50% OR LESS OF KERNEL 'LEMHP'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant, 3 = Moderately Susceptible, 4 = Moderately Resistant)

2 STEM RUST

(Race) field races

4 LEAF RUST

(Race) field races

0 STRIPE RUST

(Race) _____

0 LOOSE SMUT

0 POWDERY MILDEW

(Race) _____

0 BUNT

0 OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant, 3 = Moderately Susceptible, 4 = Moderately Resistant)

0 SAWFLY

(Race) _____

0 APHID (Byav.)

0 GREEN BUG

(Race) _____

0 CEREAL LEAF BEETLE

0 OTHER (Specify) _____

MESSIAN FLY

RACES: }

0 GP

0 A

0 B

0 c

0 D

0 E

0 F

0 g

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Stockholm	Seed size	Stockholm
Leaf size	Stockholm	Seed shape	Stockholm
Leaf color	Fjeld	Coleoptile elongation	Stockholm
Leaf carriage	Stockholm	Seedling pigmentation	Stockholm

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.T. Briggie and L.P. Reitz, 1963, Classification of *Triticum* Species and Their Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) T.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Vitreous Purity, contribution No. 23 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

EXHIBIT D.**ADDITIONAL BOTANICAL DESCRIPTION OF VOSS**

Voss is a durum spring wheat bred and developed by AgriPro Biosciences Inc. This variety is a high yielding, intermediate height semidwarf. Voss has acceptable semolina quality including the strong gluten characteristics.

Juvenile growth habit is erect. Plant color at boot stage is green with an erect (to 90 degree angle from stem), twisted flag leaf. Auricle hairs are absent and anthocyanin is present. Waxy bloom is present on the stem, head and flag leaf sheath. Head shape is tapering, middense, awned and white at maturity. Glumes are long and midwide with apiculate shoulders and acuminate beaks. Seed shape is elliptical with angular cheeks and short brush hairs. Seed crease is narrow to midwide and depth is shallow to middeep.

Voss is adapted to the entire northern spring wheat region. This includes the states of North Dakota, South Dakota and Minnesota.

EXHIBIT E.**STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP**

AgriPro Biosciences Inc. is the applicant for protection in this case being:

- a) The incorporated business (registered in Delaware) for and within which regular employees have bred the named variety.
- b) The proprietary owner and intending commercial user of the variety.

EXHIBIT F.

QUALITY AND AGRONOMIC DATA

- | | |
|---|---------|
| Quality Data | page 1. |
| Stem and Leaf Rust Ratings | page 2. |
| Red River Valley Trial Summary | page 3. |
| Trial Summary Data Voss vs. Vic | page 4. |
| Trial Summary Data Voss vs. Monroe | page 5. |
| Trial Summary Data Voss vs. Stockholm | page 6. |
| Trial Summary Data Voss vs. Lloyd | page 7. |
| Trial Summary Data Voss vs. Renville | page 8. |

YEAR: 1991

ACIERO
DURUM QUALITY

YR	VARIETY	LOC	TEST WT. lbs/bu	SEAL 14%mb	PROT. R	CAROT. ppm	MIX			NORRIS HARD	OVERALL RATING
							R	TOL.	R		
91	D87-1534	ST	60.2	3	12.6	6	8.8	2	2	210	23
90	D87-1534	TM	64.1	2	12.1	4	9.7	1	4	225	20
89	D87-1534	ST	61.5	3	12.9	3	9.2	1	3	267	17
89	D87-1534	CX	64.1	2	12.1	4	8.1	2	4	296	22
88	D87-1534	BR	59.5	2	12.8	6	7.0	4	4	290	30
AVERAGE			61.8	2	12.5	5	8.6	2	3.4	258	22
91	VIC	ST	59.7	4	14.5	2	6.3	4	1	198	18
90	VIC	TM	63.9	3	13.1	2	8.0	3	4	244	21
89	VIC	ST	62.2	3	13.7	1	6.4	4	4	283	21
89	VIC	CX	63.5	3	13.2	2	6.4	4	4	275	23
88	VIC	BR	58.2	4	14.9	2	5.9	5	3	316	24
AVERAGE			61.5	3	13.9	2	6.6	4	3.2	263	21
91	LLOYD	ST	58.7	5	13.1	5	7.5	3	3	206	27
90	LLOYD	TM	63.4	3	10.8	7	8.0	3	4	231	31
89	LLOYD	ST	62.4	3	12.8	3	7.7	3	3	264	21
89	LLOYD	CX	64.6	2	11.7	5	6.9	4	5	279	30
88	LLOYD	BR	59.9	2	13.2	5	5.7	5	4	303	30
AVERAGE			61.8	3	12.3	5	7.2	4	3.8	256	28
91	CANDO	ST	60.5	3	12.1	7	6.3	4	7	202	39
90	CANDO	TM	63.4	3	11.4	6	7.0	5	8	224	41
89	CANDO	ST	61.3	4	12.6	3	6.9	4	8	268	34
89	CANDO	CX	63.4	3	11.6	5	6.4	4	8	300	37
88	CANDO	BR	58.2	4	11.5	8	5.6	5	8	283	46
AVERAGE			61.4	3	11.8	6	6.4	4	7.8	255	39

RATINGS: 1=EXCELLENT 9=UNACCEPTABLE

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page 2.

STEM AND LEAF RUST RATINGS
CEREAL RUST NURSERY* 1992

<u>VARIETY</u>	<u>STEM RUST</u> <u>1992</u>	<u>LEAF RUST</u> <u>1992</u>
Voss	0	TMR
Vic	0	30MS
Lloyd	0	5MS
Monroe	0	30MS
Renville	0	TMR

*St. Paul, Minnesota - Uniform Regional Reports
(No Stem rust found in this nursery)

AGRI-PRO DURUM WHEAT DATA - OVER-YEAR SUMMARY FROM RED RIVER VALLEY SITES, 1990-92

VARIETY	YIELD - BU/A			% OF CAN			TW AVE			HD AVE			HT AVE			LS AVE			FD AVE			TS AVE			LEAF RUST 91 L1 L2				
	90	91	92	Ave																									
D87-1534 (Voss)	75.0	43.0	80.5	63.9	109	60.1	5.6	4.9	1.0	4.6	5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
RENVILLE	68.0	46.7	79.8	63.0	107	60.3	5.1	8.1	3.0	3.7	6	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
VIC	69.2	45.9	78.2	62.6	107	60.8	4.6	8.0	3.0	4.3	7	2	3	2	3	5	5	5	5	5	5	5	5	5	5	5	5	5	
CA886-346	71.1	40.6	82.6	62.4	106	59.9	3.4	6.0	2.0	4.3	8	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
CA885-312*	66.9	-	79.8	61.3	104	58.7	6.5	5.4	1.5	3.6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FJORD	66.2	47.3	73.5	60.8	104	61.3	3.3	7.9	2.7	4.3	7	2	3	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
D86-1523	75.3	41.7	69.7	60.2	103	60.4	4.7	4.8	1.0	5.5	4	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
STOCKHOLM	75.1	40.2	67.9	59.0	101	59.3	5.1	5.0	1.0	5.9	7	3	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	
CANDO	71.1	41.6	69.2	58.7	100	59.0	6.2	5.0	1.0	4.8	6	4	2	3	3	2	2	3	3	2	3	3	3	3	3	3	3	3	
MONROE	65.6	46.0	68.8	58.7	100	60.1	3.6	7.0	2.0	3.4	7	2	3	4	4	3	4	4	3	4	4	3	4	4	3	4	4	3	
NO. OF LOCS.	3.0	4.0	3.0	10.0		9.0	9.0	3.0	3.0	4.0	2																		

* - NOT TESTED IN 1991, ADJUSTED FOR AVERAGES

TS = TAN SPOT FUSION TEST 1=resistant/9=susceptible

HD= Heading 1=early/9=late

HT= Height 1=short/9=tall

LS= Lodging 1=strong/9=weak

FD= Foliar Disease 1=resistant/9=susceptible

Leaf Rust L1=severity & L2=reaction where 1=resistant/9=susceptible

9400168

AGRI-PRO SEEDS
HARD RED SPRING WHEAT TRIAL SUMMARY
OVER LOCATION-1989 THRU 1992

VARIETIES: D87-1534 vs. VIC

STATES	LOC'S	YIELD Bu/Ac		T.WT. lb/Eu		HEAD <u>LOC'S</u>	Days <u>LOC'S</u>	HEIGHT cm. <u>LOC'S</u>	LODGE <u>LOC'S</u>	LODGE (1-9) <u>LOC'S</u>
		D1534	VIC	D1534	VIC					
CN	2	50.7	45.7	1	63.6	64.9	0	0.0	2	81.5
MN	10	62.2	61.1	9	60.1	60.9	10	58.6	3	121.0
MT	1	74.5	63.2	1	63.0	62.8	1	64.0	1	108.7
ND	11	62.7	64.0	11	61.1	62.2	11	60.2	6	84.0
SD	2	50.7	51.3	2	56.3	56.7	1	67.0	2	71.5
ALL	26	61.1	60.5	24	60.5	61.4	23	60.0	14	99.1
								59.0	14	72.7
									4	1.5
										4.0

Note: The above data represents summaries of all available Public/Private Tests which were statistically significant (5%) and had C.V.'s less than 15.0%.

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AGRI-PRO SEEDS
HARD RED SPRING WHEAT TRIAL SUMMARY
OVER LOCATIONS-1989 THRU 1992

VARIETIES: D87-1534 vs. MONROE

STATES	YIELD Bu/Ac		T.WT. 1b/Bu		HEAD		DAYS		HEIGHT cm.		LODGE (1-9)	
	LOCs	D1534	MONROE	LOCs	D1534	MONROE	LOCs	D1534	MONROE	LOCs	D1534	MONROE
CN	2	50.7	44.7	1	63.6	63.3	0	0.0	0.0	2	81.5	118.0
MN	10	62.2	56.2	9	60.1	60.7	10	58.6	56.3	3	78.0	99.3
MT	1	74.5	55.5	1	63.0	62.5	1	64.0	62.0	1	68.0	82.0
ND	11	62.7	57.0	11	61.1	61.2	11	60.2	57.5	6	71.5	90.5
SD	2	50.7	47.6	2	56.3	56.2	1	67.0	63.0	2	62.0	71.5
ALL	26	61.1	55.0	24	60.5	60.8	23	60.0	57.4	14	72.7	93.0

*The above data represents summaries of all available Public/Private Tests which were statistically significant (5%) and had C.V.'s less than 15.0%.

AGRIPRO SEEDS
HARD RED SPRING WHEAT TRIAL SUMMARY
OVER LOCATIONS-1989 THRU 1992

VARIETIES: D87-1534 vs.: STOCKHOLM

*The above data represents summaries of all available Public/Private Tests which were statistically significant (5%) and had C.V.'s less than 15.0%.

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AGRI-PRO SEEDS
HARD RED SPRING WHEAT TRIAL SUMMARY
OVER LOCATIONS-1989 THRU 1992

VARIETIES: D87-1534 vs. LLOYD

STATES	LOC'S	YIELD Bu/Ac		T.WT. lb./Bu		HEAD		DAYS		HEIGHT cm.		LODGE			
		D1534	LLOYD	LOC'S	D1534	LLOYD	LOC'S	D1534	LLOYD	LOC'S	D1534	LLOYD	LOC'S		
CN	2	50.7	46.3	1	63.6	62.0	0	0.0	0.0	2	81.5	87.5	2	1.5	1.5
MN	9	60.7	58.2	8	60.7	59.7	9	58.9	59.4	3	78.0	82.3	1	2.0	2.0
ND	10	61.4	59.5	10	61.0	60.7	10	60.6	61.3	6	71.5	74.8	0	0.0	0.0
SD	2	50.7	49.5	2	56.3	54.2	1	67.0	2	2	62.0	63.5	0	0.0	0.0
MT	1	74.5	64.0	1	63.0	62.0	1	64.0	66.0	1	68.0	68.0	0	0.0	0.0
ALL	24	59.9	57.2	22	60.6	59.9	21	60.3	61.0	14	72.7	76.1	3	1.7	1.7

*The above data represents summaries of all available Public/Private Tests which were statistically significant (5%) and had C.V.'s less than 15.0%.

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AGRI-PRO SEEDS
HARD RED SPRING WHEAT TRIAL SUMMARY
OVER LOCATIONS-1989 THRU 1992

VARIETIES: D87-1534 vs. RENVILLE

STATES	LOCs	YIELD Bu/AC		T.WT. lb/Bu		HEAD		DAYS		HEIGHT cm.		LODGE			
		D1534	RENVILLE	LOCs	D1534	RENVILLE	LOCs	D1534	RENVILLE	LOCs	D1534	RENVILLE	LOCs	D1534	RENVILLE
CN	2	50.7	44.2	1	63.6	62.9	0	0.0	0.0	2	81.5	117.0	2	1.5	3.5
MN	10	62.2	62.6	9	60.1	60.8	10	58.6	58.2	3	78.0	104.0	1	2.0	3.0
MT	1	74.5	69.0	1	63.0	62.8	1	64.0	65.0	1	68.0	86.0	0	0.0	0.0
ND	11	62.7	64.8	11	61.1	61.5	11	60.2	59.6	6	71.5	96.5	1	1.0	3.0
SD	2	50.7	54.0	2	56.3	57.0	1	67.0	66.0	2	62.0	76.5	0	0.0	0.0
ALL	26	61.1	61.7	24	60.5	61.0	23	60.0	59.5	14	72.7	97.4	4	1.5	4.5

*The above data represents summaries of all available Public/Private Tests which were statistically significant (5%) and had C.V.'s less than 15.0%.